Aero-Acoustic Propulsion Laboratory

at NASA Glenn Research Center – Cleveland, Ohio

Facility Description: The Aero-Acoustic Propulsion Laboratory (AAPL) is a world-class facility providing outstanding testing services in aircraft noise reduction, with an emphasis in engine nozzle and fan components. A large far-field acoustic arena is used at the Nozzle Acoustic Test Rig (NATR) to acquire fly-by and sideline acoustic data of nozzle concepts at simulated flight conditions up to Mach 0.30.

AAPL provides three state-of-the-art test rigs:

- **Nozzle Acoustic Test Rig (NATR)** – supporting aircraft nozzle acoustic research
- **Small Hot Jet Acoustic Rig (SHJAR)** – supporting jet noise fundamental research
- **Advanced Noise Control Fan (ANCF)** – supporting fan acoustic research

Facility Benefits:

- Free-jet acoustic tunnel simulating flight conditions up to Mach 0.30
- High Flow Jet Exit Rig (HFJER) used to simulate nozzle pressure and temperature conditions
- Offers a large far-field acoustic measurement arena
- Provides simultaneous sideline and fly-by acoustic data measurements
- Advanced diagnostic testing capabilities
- State-of-the-art control room
- Accommodates in-house and private industry research programs
- Highly qualified staff of technicians, engineers, researchers, and operators

Commercial Applications:

- The dome provides an anechoic testing environment for acoustic measurements of aeropropulsion components

Programs/Projects Supported:

- Quiet Aircraft Technology
- Ultra-Efficient Engine Technology
- Pulse Detonation Engine Test
- Low Emissions Alternative Power (LEAP) Program

Contact:

Luis R. Beltran, AAPL Facility Manager
NASA Glenn Research Center
Phone: (216) 433-5678
Fax: (216) 433-8551
E-mail: Luis.R.Beltran@nasa.gov

Facility Testing Information:

For information on testing please go to:
http://facilities.grc.nasa.gov

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